CLAIM SUMMARY DOCUMENT

Please cancel claims 1-11 and 19-34 without prejudice of or disclaimer thereto, and please amend claims 12-18 and 35-37 as set forth below. Also add new claims 38-41.

Claims 1-11 **(Canceled)**

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12. **(Currently Amended)** ~~Use according to Claim 11~~ The method of claim 38, wherein all the amino acids of the compound are D-isomers.

13. **(Currently Amended)** ~~Use according to Claim 9~~ The method of claim 38, wherein Y' is Lys.

14. **(Currently Amended)** ~~Use according to Claim 13~~ The method of claim 38, wherein Y' is Lys and Z' is Phe.

C1 15. **(Currently Amended)** ~~Use according to Claim 11~~ The method of claim 38, wherein Y' is Phe.

16. **(Currently Amended)** ~~Use according to Claim 11~~ The method of claim 38, wherein X' is Val-Val.

17. **(Currently Amended)** ~~Use according to Claim 11~~ The method of claim 38, wherein R_1 is acetyl.

18. **(Currently Amended)** ~~Use according to Claim 11~~ The method of claim

C1 cont 38, wherein R_1 is H or R_2 is H.

Claims 19-34 **(Canceled)**

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35. **(Currently Amended)** A method for treating or preventing demens in a ~~patients~~ patient having Downs syndrome comprising administering to the patient in need thereof an effective amount of a compound according to ~~Claim 1~~ formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \text{ (I)}$$

in which X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in β amyloid peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

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Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or $-CO-R_3$ bonded at the α-amino group of A';

R_2 is H, $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH_2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.

36. **(Currently Amended)** A method for treating or preventing hereditary cerebral hemorrhage associated with amyloidosis (Dutch type) comprising administering to a patient in need thereof an effective amount of a compound according to ~~Claim 1~~ formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \text{ (I)}$$

in which

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X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in amyloid β peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or -CO-R_3 bonded at the α-amino group of A';

R_2 is H, -OR_4 or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are

-$(CH_2)_n$-, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.

37. **(Currently Amended)** A method for preventing ~~fribal~~ fibril formation of human amyloid protein in a patient in need ~~of such prevention~~ thereof comprising administering to said patient an effective amount of a compound according to ~~Claim 1~~ formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \quad (I)$$

C2 Cont

in which

X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in amyloid β peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or -CO-R_3 bonded at the α-amino group of A';

R_2 is H, -OR_4 or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

C2 COND

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH_2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.

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38. (New) A method for inhibiting polymerization of an amyloid β peptide in a patient in need thereof comprising administering to said patient a therapeutic effective amount of a compound having formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \quad (I)$$

in which

X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in amyloid β peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

C3 Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or $-CO-R_3$ bonded at the α-amino group of A';

R_2 is H, $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.

39. (New) A method for treating or preventing Alzheimer's disease or another disease characterized by amyloidosis in a patient in need thereof comprising administering to said patient a therapeutic effective amount of a compound having formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \text{ (I)}$$

C3 cont

in which

X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in amyloid β peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or $-CO-R_3$ bonded at the α-amino group of A';

R_2 is H, $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.

40. **(New)** A method for inhibiting polymerization of an amyloid β peptide to a ligand comprising contacting an amyloid β peptide containing environment with a polymerization inhibitory effective amount of a compound according to formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \text{ (I)}$$

C3 cont

in which

X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in amyloid β peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or $-CO-R_3$ bonded at the α-amino group of A';

R_2 is H, $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.

41. **(New)** A method for inhibiting polymerization of an amyloid β peptide comprising contacting an amyloid β peptide containing environment with a polymerization inhibiting effective amount of a compound according to formula

$$R_1 - A' - Y' - Leu - X' - Z' - B' - R_2 \text{ (I)}$$

C3 cont in which

X' means any group or amino acid imparting to the compound of formula (I) the ability to bind to the KLVFF-sequence in amyloid β peptide, or two amino acids imparting the same ability, but with the proviso that one is not proline;

Y' means any amino acid;

Z' means any non-acidic amino acid;

A' means a direct bond or an α-amino acid bonded at the carboxyl terminal of the α-carboxy group or a di-, tri-, tetra- or pentapeptide bonded at the carboxyl terminal of the α-carboxy group;

B' means a direct bond or an α-amino acid bonded at the α-nitrogen or a di-, tri-, tetra- or pentapeptide bonded at the α-nitrogen of the N-terminal α-amino acid;

R_1 is H or $-CO-R_3$ bonded at the α-amino group of A';

R_2 is H, $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of B';

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

C3 cont'd

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

all the α-amino acids can be either D- or L-isomers.